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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/027,249
Filing Date: December 20, 2001
Appellant(s): MAY ET AL.

Anthony J. Josephson
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed April 9, 2008 appealing from the Office action mailed December 20, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2002/0176658 A1	Prohaska	11-2002
6,873,795 B1	Sugaya	5-2005
5,986,782	Alexander	11-1999
5,521,701	Felger et al.	5-1996
4,903,339	Solomon	2-1990

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-5, 11-12, 14-17, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugaya (U.S. Patent US 6,873,795 B1) in view of Prohaska (U.S. Patent Application Publication US 2002/0176658 A1) and further in view of Felger et al. (U.S. Patent US 5,521,701).

Regarding claims 1 and 12, Sugaya discloses an apparatus (fig. 11) for measuring optical power in an optical system, comprising: a wavelength select unit (fig. 11, combination of 30 and 13) having output ports (fig. 11, outputs from element 13 and 30) to selectively pass received optical signals to one of the output ports (fig. 11, the output from element 30 to element 31), the wavelength select unit (fig. 11, combination of 30 and 13) passes a set of the optical signals comprised of more than one individual wavelength to the one of the output ports (fig. 11, the output signals from element 30 to element 31) at the same time, and a power meter (fig. 11, PD 31; note that PD detects the power, see column 2, lines 6-12) measures the power in the subset of the optical signals (fig. 11, signals output from element 30 to PD 31); the power meter (fig. 11, PD 31) which receives optical signals (fig. 11, the signal from element 30 to PD 31) from an output port (the output from element 30) and measures the power in the optical signals; and controlling an optical amplifier in accordance with the power of the optical signals to regulate optical signal power of the optical signals (fig. 11). Sugaya differs from the claimed invention in that Sugaya does not specifically disclose that the wavelength select unit is a wavelength select switch. However, a wavelength select switch is well known in the art. For example, Prohaska discloses a wavelength select switch (fig. 7). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a wavelength select switch, such as the one taught by Prohaska, in the system of Sugaya to replace the wavelength select unit. One of ordinary skill in the art would have been motivated to do so in order to select a wavelength within a short switching time (Prohaska: abstract). The modified system of

Sugaya and Prohaska differs from the claimed invention in that Sugaya and Prohaska do not specifically teach displaying an indication of the optical signal power in the optical signal on a monitor to a system administrator. However, it is well known in the art to display an indication of measured optical power to a system administrator. For example, Felger discloses display an indication of measured optical power (fig. 1, power display 37) to a system administrator. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include an optional local alarm indicator, as it is disclosed by Felger, in the modified system of Sugaya and Prohaska. One of ordinary skill in the art would have been motivated to do so in order to provide readings of the optical power (Felger: column 3, lines 41-57).

Regarding claims 3 and 14, Sugaya further teaches that the optical signal comprises different wavelengths of optical energy (column 3, line 61 to column 4, line 4).

Regarding claims 4-5 and 15-16, Sugaya further teaches an optical tap or power splitter (fig. 11, optical tap 22) that diverts a portion of optical signals incident on an optical medium to obtain the optical signals.

Regarding claim 11, Sugaya further discloses the operation of controlling an optical amplifier (fig. 11, combination of 25, 26, 27, 28, and 29) in accordance with the power of the optical signal to regulate optical power of the optical signals on the transmission medium (column 3, line 61 to column 4, line 4).

Regarding claim 17, the modified system of Sugaya, Prohaska, and Felger can be applied to measure DWDM signals since Prohaska discloses that the wavelength select switch can be used for DWDM signals (paragraph 0002).

Regarding claims 24 and 25, Sugaya further discloses that the power meter (fig. 11, PD 13) measures the combined power of the optical signals.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugaya (U.S. Patent US 6,873,795 B1) in view of Prohaska (U.S. Patent Application Publication US 2002/0176658 A1) and Felger et al. (U.S. Patent US 5,521,701) and further in view of Solomon (U.S. Patent US 4,903,339).

Regarding claim 10, Sugaya, Prohaska, and Felger have been discussed above in regard with claim 1. The modified system of Sugaya, Prohaska, and Felger differs from the claimed invention in that Sugaya, Prohaska, and Felger do not specifically disclose determining if the power in the optical signal has passed a predetermined threshold and triggering an alarm if the power in the optical signal has crossed the predetermined threshold. However, it is well known in the art to determine if the power in the optical signal has passed a predetermined threshold and trigger an alarm if the power in the optical signal has crossed the predetermined threshold. For example, Solomon discloses that it is well practiced in the art to determine if the power in the optical signal has passed a predetermined threshold and trigger an alarm if the power in the optical signal has crossed the predetermined threshold (column 1, lines 25-44). Therefore, it would have been obvious for one of ordinary skill in the art at the time

when the invention was made to incorporate an alarm trigger circuitry, as it is disclosed by Solomon, in the modified system of Sugaya, Prohaska, and Felger. One of ordinary skill in the art would have been motivated to do so in order to inform a system administrator that a malfunctioning occurs in an optical communication system.

4. Claims 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugaya (U.S. Patent US 6,873,795 B1) in view of Prohaska (U.S. Patent Application Publication US 2002/0176658 A1) and Felger et al. (U.S. Patent US 5,521,701) and further in view of Alexander et al. (U.S. Patent US 5,986,782).

Regarding claims 7 and 18, Sugaya, Prohaska, and Felger have been discussed above in regard with claims 1 and 12. Sugaya further teaches successively directing optical signals through the wavelength select switch cycles others of the optical signals to the other output port (fig. 11, the output from element 13 to PD 14) and the power meter (fig. 11, PD 14) measures power in the others of the optical signals (column 13, lines 35-51) and Felger further discloses that the wavelength select switch can successively direct a selected wavelength output (Prohaska: fig. 7, fiber 2). The modified system of Sugaya, Prohaska, and Felger differs from the claimed invention in that Sugaya, Prohaska, and Felger do not specifically disclose that the optical powers are detected with one power meter. However, it is well known in the art to detect optical powers using one power meter. For example, Alexander discloses to use one power meter to detect optical signals (column 4, lines 49-60). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to

incorporate an optical power meter to detect the powers of optical signals, as it is taught by Alexander, in the modified system of Sugaya and Prohaska. One of ordinary skill in the art would have been motivated to do so in order to reduce the number of power meters needed (Alexander: column 4, lines 49-60).

(10) Response to Argument

1. Regarding claims 1, 3-5, 11, 12, 14-17, 24, and 25, Appellant argues, “None Of The References, Either Alone Or In Combination, Disclose Or Suggest Controlling An Optical Amplifier In Accordance With A Power Of Optical Signals In Order To Regulate The Optical Power Of An Optical Signal” (Section D on Page 8 of the instant Brief). More specifically, Appellant argues that "none references, either alone or in combination, disclose or suggest controlling an optical amplifier in accordance with a power of optical signals in order to regulate the optical power of an optical signal”. However, Sugaya clearly and undoubtedly teaches an apparatus (Sugaya: fig. 11) that controls an optical amplifier in accordance with a power of optical signals in order to regulate the optical power of an optical signal (Sugaya: column 12, lines 4-64. Please note that the description of Fig. 9 also applies to Fig. 11). Sugaya explicitly teaches that the apparatus is for "controlling wavelength-division-multiplexed light (column 12, lines4-7).

As it is admitted by the Appellant, “Sugaya discloses a photodiode 31, which converts a wavelength-division-multiplexed signal into an electric signal, and sends the electric signal to a total-power uniformalizing controller 32. Furthermore, Sugaya

discloses a control correction unit 33, which outputs a signal to an excitation light source 29 based on the output from the total-power uniformalizing controller 32 or a peak detection circuit 15. The excitation light source 29 emits light, which is multiplexed with light passing through an optical fiber 21 before the light enters an optical amplifying fiber 28. Thus, the excitation light source 29 controls a level of light input into the optical amplifying fiber 28 and then output based on the level of light input into into (sic) the optical amplifying fiber 28." (Second paragraph on page 9 of the instant Brief). Clearly, the apparatus of Sugaya (Sugaya: fig. 11) DOES control an optical amplifier in accordance with a power of optical signals in order to regulate the optical power of an optical signal.

Appellant argues, "However, the excitation light source 29 is not controlling the optical amplifying fiber 28 itself. Instead, the excitation light source is merely controlling the amount of light which is input into, and then output from, the optical amplifying fiber 28". Please note that it is a common knowledge that **both of the "excitation light source 29" and the amplifying fiber 28 are part of the optical amplifier**. By controlling the excitation light source 29 of the optical amplifier, the amount of output light from the amplifier is controlled. Please note that it is a common knowledge for one of ordinary skill in the art that "**optical power**" is a quantitative measure of "**amount of light**". Therefore, Sugaya clearly and undoubtedly teaches an apparatus (Sugaya: fig. 11) that controls an optical amplifier in accordance with a power of optical signals in order to regulate the optical power of an optical signal (Sugaya: column 12, lines 4-64,

and column 13, lines 35-51. Please note that the description of Fig. 9 also applies to Fig. 11).

In view of the above discussion, Sugaya clearly reads the claimed limitation of "controlling an optical amplifier in accordance with the power of the optical signals to regulate optical power of the optical signals." Examiner clearly and undoubtedly has established a *prima facie* case of un-patentability for claims 1, 3-5, 11, 12, 14-17, 24, and 25.

2. Regarding claim 12, Appellant argues, "None Of The References, Either Alone Or In Combination, Disclose Or Suggest A Controller, Which Controls An Optical Amplifier By Generating A Control Signal In Accordance With A Power Of Optical Signals To Regulate Optical Power Of The Optical Signals" (page 9 of the instant Brief). However, as it has been discussed above, Sugaya clearly and undoubtedly teaches an apparatus (Sugaya: fig. 11) that controls an optical amplifier in accordance with a power of optical signals in order to regulate the optical power of an optical signal (Sugaya: column 12, lines 4-64. Please note that the description of Fig. 9 also applies to Fig. 11). The controller (fig. 11, combination of elements 15, 32, and 33) of Sugaya DOES control an optical amplifier (fig. 11, combination of pump 29 and amplifying fiber 28) by generating a control signal (fig. 11, the signal output from element 33) for an optical amplifier (fig. 11, combination of pump 29 and amplifying fiber 28) in accordance with the power of the optical signals to regulate optical power of the optical signal (fig. 11,

signals output from element 30 to PD 31). Examiner clearly and undoubtedly has established a *prima facie* case of un-patentability for claim 12.

3. Appellant further argues, "There Is No Apparent Reason To Combine The Teachings Of Sugaya, Prohaska, And Felger" (page 10 of the instant Brief). Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In addition, "It is common sense that familiar items may have obvious uses beyond their primary purposes, and a person of ordinary skill often will be able to fit the teachings of multiple patents together like pieces of a puzzle." See KSR, 137 S. Ct. at 1742, 82 USPQ2d at 1397.

For the instant case, Sugaya teaches an apparatus (Sugaya: fig. 11) that controls an optical amplifier in accordance with a power of optical signals in order to regulate the optical power of a wavelength-division-multiplexed optical signal (Sugaya: column 12, lines 4-64, and column 13, lines 35-51). In order to generate the control signal, Sugaya teaches a wavelength select unit (fig. 11, combination of 30 and 13) passing a set of the optical signals comprised of more than one individual wavelength to the one of the output ports (fig. 11, the output signals from element 30 to element 31) at the same time to a power meter (fig. 11, PD 31; note that PD detects the power, see column 2, lines 6-

12) to measure the power in the subset of the optical signals (fig. 11, signals output from element 30 to PD 31). Sugaya also teach to selectively output wavelengths of the wavelength-division-multiplexed optical signal to detect the peak of the optical signal to generate a control signal that controls the gain tilt (column 18, lines 11-29). Sugaya differs from the claimed invention in that Sugaya does not specifically disclose that the wavelength select unit is a wavelength select switch. However, a wavelength select switch is well known in the art. For example, Prohaska discloses a re-configurable wavelength select switch (figs. 5 and 7) to select one wavelength from a wavelength-division-multiplexed optical signal (paragraph 0018). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a wavelength select switch, such as the one taught by Prohaska, in the system of Sugaya to replace the wavelength select unit. One of ordinary skill in the art would have been motivated to do so in order to select a wavelength within a short switching time (Prohaska: abstract). The modified system of Sugaya and Prohaska differs from the claimed invention in that Sugaya and Prohaska do not specifically teach displaying an indication of the optical signal power in the optical signal on a monitor to a system administrator. However, it is well known in the art to display an indication of measured optical power to a system administrator. For example, Felger discloses display an indication of measured optical power (fig. 1, power display 37) to a system administrator. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include an optional local alarm indicator, as it is disclosed by Felger, in the modified system of Sugaya and Prohaska. One of

ordinary skill in the art would have been motivated to do so in order to provide readings of the optical power (Felger: column 3, lines 41-57).

In view of the above discussions, the combination of cited prior art references are proper since the suggestions or motivations to combine the cited references are all found in the references. Therefore, Examiner has clearly established a *prima facie* case of un-patentability in accordance with MPEP and KSR for claims 1, 3-5, 11, 12, 14-17, 24 and 25.

4. For the same reasons discussed above, Examiner has also established a *prima facie* case of un-patentability in accordance with MPEP and KSR for claims 7-8 and 10.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

(12) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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Examiner, Art Unit 2613

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/Jason Chan/

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